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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/716,708	11/20/2000	Wolfgang Siebert	SIEBERT ET AL 2	6782

7590 06/09/2003

COLLARD & ROE, P.C.
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Roslyn, NY 11576

EXAMINER
RAO, SHRINIVAS H

ART UNIT	PAPER NUMBER
2814	

DATE MAILED: 06/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application N .	Applicant(s)	
	09/716,708	SIEBERT ET AL.	
	Examiner	Art Unit	
	Steven H. Rao	2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period f r Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 March 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disp sition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) *2-11* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 November 2000* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Priority

Receipt is acknowledged of paper submitted under 35 U.S.C. 132 requesting a Continued Examination of the instant Application and those submitted under 37 CFR 1.114 based on U.S. Application No. 09/716,708 filed on April 04, 2003, which itself claims priority from German Patent Application No. 199 60283 filed on December 16, 1999 under 35 U.S.C. 119 (d) which papers have been placed of record in the file.

Continued Prosecution Application

The request filed on 04/04/2003 for a Request for Continued Examination Application (RCE) under 37 CFR 1.114 based on parent Application No. 09/716, 708 is acceptable and a RCE has been established. An action on the RCE follows.

Preliminary Amendment Status

Acknowledgment is made of entry of preliminary amendment filed 3/10 / 2003. Therefore claim 1 as originally filed is currently pending in the Application.

Claims 2-11 were previously withdrawn from the Application.

Election/Restrictions

This application contains claims 2 to 11 drawn to an invention nonelected with traverse in Paper No. 9.

A complete reply to the final rejection of November 06, 2002 must have included cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

However the claims 2-11 have not been can celled to date, if the next Applicants' response does not include a cancellation of the claims 2-11, such response may be held non-complaint.

Drawings

New corrected drawings are required in this application because for the objections set out in PTO- 948 mailed on November 06, 2002 . Applicant is advised to employ the services of a competent patent draftsperson outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Applicants' response filed March 10, 2003 states , " Applicant is filing correct formal drawings" (page 2 , 2nd para). However the PTO ahs not received any formal drawings so far.

As stated above, failure to file corrected drawings before/with the next response will result in the abandonment of the application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson et al. (U.S. Patent no. .6,284,384, herein after Wilson). And Vepa (EPA No. 684634, Krishna Vepa et al., herein after Vepa, cited by the applicants' in their IDs) as previously stated for response to Applicants' contentions see section below.

With respect to claim 1, Wilson describes a semiconductor wafer (Wilson fig. 1 #1, col.8 line31) with a front surface (fig.1 # 3, col.8 line 32) and a back surface (fig. 1 # 5, col. 8 line 33) and an epitaxial layer of semi conducting material deposited on the front surface (col. 9 lines 49-50), wherein the surface of the epitaxial layer has a maximum density of 0.14 localized light scattering per cm^2 with a cross section of greater than or equal to 0.12Um (Wilson col. 8 lines 4-10).

The front surface of the wafer prior to the deposition of epitaxial layer, has a surface roughness of 0.05 to 0.29 nm RMS, measured by AFM on a 1 Ux1Um reference area.

Wilson does not specifically describe the front surface of the wafer prior to the deposition of epitaxial layer, has a surface roughness of 0.05 to 0.29 nm RMS, measured by AFM on a 1 Ux1Um reference area.

However, Vepa a patent from the same filed of endeavor, describes a polishing method that produces an average surface roughness of not greater than 1.0 nm Ra to produce a wafer with improved surface roughness with reduced haze.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to Vepa's surface roughness parameters in Wilson's polishing and cleaning technique (Wilson col. 17 lines 1-5) to produce a wafer with improved surface roughness with reduced haze. (Vepa page 3 lines 3-5).

Response to Arguments

Applicant's arguments filed 3//10/2003 have been fully considered but they are not persuasive for the following reasons :

Applicants' first contention is Wilson does not describe its semiconductor wafer's surface having a roughness of 0.05 to 0.29 RMS is not persuasive because Applicants' are engaging in piece meal analysis of the rejection.

It is well settled law that, one cannot show non-obviousness by attacking references individually where as here, the rejections are based on combinations of references In re Keller, 208 USPQ 871 (CCPA 1981).

Applicants' second contention that only the best mode of the secondary Vepa reference must be applied is not persuasive because it is well settled law that the entire teachings of the reference is applicable prior art and not only the best mode.

Further it is noted that the specification contains no disclosure of either the critical nature of the claimed dimensions (i.e. surface roughness of 0.05 to 0.29 rm RMS) or of any unexpected results arising there form. Where patentability is said to be

based upon particular chosen dimensions or upon another variable recited in the claim, the Applicant must show that the chosen dimensions are critical. In re Woodruff, 919 F. 2d 1575, 1578, 16 USPQ 2d 1934, 1936 (Fed. Cir. 1990).

Applicants' next contention that Wilson and Vepa lack any reference to an additional smoothing step the wafer is subjected to in order to achieve the claimed roughness is not persuasive because the claim in consideration is a device claim and process steps cannot be relied upon in considering the patentability of product claims.

Therefore the combined teachings of Wilson and Vepa clearly teaches all the presently recited limitations.

Applicants' next contention that Vepa does not teach roughness below 0.5nm is not persuasive because Applicants' are relying upon Vepa's preferred embodiments only and not on the entire teaching of Vepa .

As pointed out in the Advisory Action Vepa teaches the surface roughness range including 0.001 to .10nm Ra.

Therefore all the presently recited limitations are taught by the combined teachings of Wilson and Vepa.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven H. Rao whose telephone number is (703) 3065945. The examiner can normally be reached on 8.00 to 5.00.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 3067722.

Steven H. Rao
Patent Examiner

June 3, 2003

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